WHAT IS CLAIMED IS:

1. A sprayable erosion coating mixture for protecting aircraft and aircraft engine components, said mixture comprising:

a) A latex containing liquid;

b) an additive for changing the dielectric constant of said latex containing liquid liquid; and

c) a catalyst for enabling the chemical reaction of said latex containing liquid and said additive.

2. An erosion coating mixture according to claim 1, the mixture comprising de-ionized water.

3. An erosion coating mixture according to claim 1, wherein said mixture has a solid content of from about 56% to about 75%.

4. An erosion coating mixture according to claim 1, wherein said mixture has a mixture viscosity form about 50cp to 400cp.

5. At least one of an aircraft and aircraft engine component coated with a sprayable erosion coating for protecting said aircraft and aircraft engine components, said coating comprising:

a) latex; and

b) an additive for providing a desired dielectric constant.

6. A component according to claim 5 wherein said coating is applied to the outer surface of said component.

7. A component according to claim 5 wherein said coating substantially completely coats at least a portion of said component.

8. A component according to Claim 5 wherein said coating is a cured coating.

9. A component according to Claim 5 wherein said coating has a dielectric constant of from about 2.0 to about 4.2 at 10 GHz.

10. A method for applying a sprayable erosion coating to at least one of an aircraft component and an aircraft engine component, said method comprising the steps of :

a) preparing the component for application of said coating;

b) applying said coating to said component by spraying;

c) curing said coated component.

11. A method according to claim 10, wherein the step of preparing the component comprises the steps of:

a) grit blasting;

b) pressure washing said component to substantially completely remove excess grit; and

c) priming the pressure washed component.

12. A method according to claim 11, wherein said grit blasting is from an impingement angle from about 10 degrees to about 90 degrees.

13. A method according to claim 11, wherein said grit blasting comprises a grit size from about 60 grit to about 100 grit.

14. A method according to claim 11, wherein said grit blasting is from a stand off distance from about 4 inches to 12 inches.

15. A method according to claim 11, wherein said grit blasting is at a pressure from about 20 pounds to 100 pounds per square inch.

16. A method according to claim 10, comprising robotic spraying of said coating.

17. A method according to claim 10, wherein the step of curing comprises the steps of:

a) curing said coated component by air to produce an air cured coated aircraft substrate; and

b) post curing the air cured coated component, wherein the temperature of said air cured coated component is gradually elevated from about room temperature to about 400 degrees Fahrenheit.

18. A method according to claim 17, wherein the temperature of said air cured component is gradually elevated at a rate of from about 100 degrees Fahrenheit per hour to about 140 degrees Fahrenheit per hour.

19. A method according to claim 18 wherein, said air cured coated aircraft substrate is soaked for one hour at temperature increments of about 50 degrees Fahrenheit, starting at about 150 degrees Fahrenheit.

20. A method according to claim 17, wherein said air cured coated component is soaked for up to about 5 hours at 400 degrees Fahrenheit.

21. A method for providing a protective coating on an aircraft or aircraft engine component, the method comprising the steps of:

providing a coating composition comprising latex;

spraying the coating composition on the component; and

curing the component.